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EXAMINER	
LEE, JAEYUN	

ART UNIT	PAPER NUMBER
1791	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/560,758	MEYER ET AL.	
	Examiner	Art Unit	
	JAEYUN LEE	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) *9 and 10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 13-25* is/are rejected.

7)☒ Claim(s) *11 and 12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/14/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 7-8 in the reply filed on 2/27/2009 is acknowledged.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim12, it is unclear and confused wherein the method comprising mixing glycerin to water in a ratio in the order of magnitude of 85% glycerin to 15% water, since such would only satisfy when the adhesive is mixtures of glycerin and water, which do not further limit the claim of claim 11 wherein the method comprising using glycerin or water or mixtures thereof as the adhesive.

For the purpose of examination, the examiner interprets the claim 12 as the method wherein a mixture is the adhesive further comprising mixing glycerin to water in a ratio in the order of magnitude of 85% glycerin to 15% water.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1, 3-6, and 14-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Boel et al. (US 4,175,162).

With respect to claims 1 and 3, De Boel et al. disclose a method for producing fire protection glazing (abstract), comprising at least two flat substrates (figure 1, items 18 and 19; two glass sheets) and one fire protection layer comprising at least one film or a film system having at least one intumescent layer (figure 1, item 20; intumescent layer), the method comprising the following steps: applying film of the fire protection layer 20 onto a first substrate 18, applying second substrate 19 onto the first substrate 18 with the film 20, carrying out a laminating process a elevated pressure and elevated temperature (figure 1; column 8, lines 30-52; abstract).

AlthoughDe Boel et al. disclose that the each stratum of intumescent material is preformed on a temporary support which is removed from the stratum during assembly of the sandwich (column 5, lines 61-64), it is silent as to the method comprising: the step wherein applying several film sections of the fire protection layer on to a first substrate, whereby the film sections cover the entire surface of the substrate that is to be provided with the fire protection layer; wherein the edges of the film sections abut each other and/or overlap slightly after being applied onto the first substrate.

However, one skilled in the art would have readily appreciated to recognize that in order to cover the entire surface of the substrate that is to be provided with the fire protection layer, depending on the size of the preformed intumescent layer, more than one preformed intumescent layer are needed and is therefore it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to apply the several intumescent layers onto the first substrate to provide the entire coverage of the surface of the substrate that needs to be provided with the fire protection layer.

Also, it would have been obvious to one of ordinary skill in the art to apply the several intumescent layers wherein the edges of the such layers abut each other and/or overlap slightly after being applied onto the first substrate to ensure there is no gaps between the layers being applied and such would provide the maximum coverage of the substrate that needs to be provided with the fire protection layer.

With respect to claim 4, De Boel et al. as modified by De Boel et al. (claim 1) disclose the method comprising laying the substrate and the film sections on top of each other in a desired layer structure in a laminator (figure 1) then evacuating the layer

structure and charging the layer structure with atmospheric pressure under elevated temperature in order to create a pre-laminate (column 8, lines 13-66).

With respect to claim 5-6, De Boel et al. as modified by De Boel et al. (claim 1) disclose the method comprising affixing and/or adhering the film sections to the first substrate and/or the second substrate (column 10, lines 31-34).

With respect to claims 14-15, De Boel et al. as modified by De Boel et al. (claim 1) disclose the method wherein the pressure during the laminating process is in the range of about 1 to 10 bar and/or about 1 bar to about 2 bar (atmospheric pressure; column 8, lines 57-60).

With respect to claims 16-17, Although, De Boel et al. as modified by De Boel et al. (claim 1) disclose the sandwich assembly being exposed to the heat treatment chamber at various temperatures (column 8, lines 35-68 to column 9, lines 1-52; column 10, lines 30-34), It is silent as to the method wherein the temperature during the laminating process lies within the thermoplastic range of the fire protection layer and below the foaming temperature of the fire protection layer; wherein the temperature during the laminating process lies 10 °C to 20 °C below the foaming temperature of the fire protection layer.

However, using none but the expected experimentation, it would have been obvious to one of ordinary skilled in the art to employ the laminating temperature process lies within the thermoplastic range of the fire protection layer and below the foaming temperature of the fire protection layer as claimed to provide a desired laminating temperature to produce fire protection glazing. Clearly, the temperature

applied to the material is result effective variables which would have been determined through routine experimentation.

With respect to claims 18-21, Although, De Boel et al. as modified by De Boel et al. (claim 1) disclose the sandwich assembly being exposed to the heat treatment chamber at various temperatures (column 8, lines 35-68 to column 9, lines 1-52; column 10, lines 30-34), It is silent as to the method wherein the temperature during the laminating process is at least 70 °C and/or at least 80 °C and a maximum 100 °C and/or at a maximum 150 °C.

However, using none but the expected experimentation, it would have been obvious to one of ordinary skilled in the art to employ the laminating temperature process as claimed to provide a desired laminating temperature to produce fire protection glazing. Clearly, the temperature applied to the material is result effective variables which would have been determined through routine experimentation.

With respect to claims 22-24, Although De Boel et al. as modified by De Boel et al. (claim 1) disclose the sandwich assembly being in the treatment chamber, it is silent as to the method wherein the during of the laminating process is about 3 to 6 hours; wherein the duration of the laminating process is 4 hours; wherein the laminating process comprises a heating phase of about 1 hour, a retention phase of about 2 hours, and a cooling phase of about 1 hour.

However, using none but the expected experimentation, it would have been obvious to one of ordinary skilled in the art to employ the duration of laminating process

as claimed to provide a desired laminating process duration to produce optimum fire protection glazing.

With respect to claim 25, De Boel et al. as modified by De Boel et al. (claim 1) disclose as discussed above. However, it is silent as to the method wherein the dimensions of the substrate are about 3.21 meters in width and about 6.0 meters in length.

However, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to employ the substrate having as claimed and such dimensions of the substrate are totally dependent on the one's desired area of the fire protection need to be.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Boel et al. (US 4,175,162) in view of RANKINS (EP 494548 A1).

With respect to claim 2, De Boel et al. as modified by De Boel et al. (claim 1) disclose as discussed above in paragraph 7. However, it is silent as to the method wherein the fire protection glazing comprises more than two substrates.

It is known in laminated glazing material art (title, RANKINS) that a laminated glazing material comprising two layers of a clear resin material 5, sandwiched between outer layers of a non-reflective glass 1 and inner layers of glass 3, which in turn sandwich a central layer of a clear intumescent material 4, is described. The material is impact resistant, non-reflective and is able to provide a barrier against the spread of fire (p.1; abstract; p.4 figure).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the Applicant's invention to employ the substrates of De Boel et al. as modified by De Boel et al. to be additionally bonded with non-reflective glasses of RANKINS for purpose of providing clear visibility and to reduce the effect of lens flare as taught by RANKINS (column 1, lines 38-52).

9. Claims 7-8, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Boel et al. (US 4,175,162) in view of MURCH (US 3,934,066).

With respect to claims 7-8, De Boel et al. as modified by De Boel et al. (claim 1) disclose as discussed above in paragraph 7. However, it is silent as to the method comprising using water-soluble organic binder for the adhesion process; wherein using at least one of polyvinyl alcohols, cellulose derivatives, alcohols and polyalcohol for the adhesion process.

It is known in a fire-retardant, intumescent laminate system art (MURCH; abstract) that the intumescent laminate system wherein an adhesive layer 13 is bonded to the inner surface of the intumescent layer 11. Such a laminate may be applied directly to the surface to be protected (column 2, lines 49-53; figure 2). The methods of adherence to the substrate can either by coating the inner surface of the intumescent laminate with an adhesive or coating the surface of the substrate to be protected with the adhesive prior to bonding. If desired both surfaces can be coated with the bonding adhesive. The adhesive must be thermally stable, at least up to initial intumescent temperature range. (column 9, lines 11-20). Typical non-limiting examples of operable adhesives include synthetic resin based phenolics such as phenol-formaldehyde or

resorcinol-formaldehyde, etc. Particularly suitable are polyvinyl alcohol or polyvinyl acetate latex based adhesives (column 9, lines 24-31).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the Applicant's invention to employ the preformed intumescent layers of De Boel et al. as modified by De Boel et al. with the water-soluble organic binder such as polyvinyl alcohol as taught by MURCH to ensure the preformed intumescent layers of De Boel et al. as modified by De Boel et al. to be adhered to the substrates and such would provide the intumescent layers to be in the desired place without moving around during laminating process.

With respect to claim 13, De Boel et al. as modified by De Boel et al. (claim 1) disclose as discussed above in paragraph 7. However, it is silent as to the method comprising introducing additional functional layers between the first substrate and the second substrate.

It is known in a fire-retardant, intumescent laminate system art (MURCH; abstract) that the intumescent laminate system adhered to the surface of a combustible or heat sensitive substrate 14 (figure 4). Also, it includes an additional vapor barrier layer 15, e.g., aluminum foil, polyester film, adhered to the inner surface of the intumescent layer 11 (figure 5) (column 2, lines 54-64; figures 4-6).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the Applicant's invention to employ the preformed intumescent layers of De Boel et al. as modified by De Boel et al. with an additional functional layers as taught by

MURCH as a barrier to provide additional protection to the heat-sensitive substrate of Ed Boel et al. as taught by MURCH (column 3, lines 1-10).

Allowable Subject Matter

10. **Claim 11** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. **Claim 12** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

IDS

12. The reference DE 100 02 277 A1 was previously cited in an IDS dated December 14, 2005, in its original language but is not cited in the IDS list dated December 30, 2006 properly.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAEYUN LEE whose telephone number is (571)270-5114. The examiner can normally be reached on Monday thru Friday 8am to 5pm est..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JL/
7/29/2009

/Richard Crispino/
Supervisory Patent Examiner, Art Unit 1791